Homework 3: ASCII and Unicode

1. A simple three-letter code word is saved to a personal disk.

   (a) What is the size in bytes of the code word? [1]

   (b) The code word is represented on the disk in a binary format, saved as:

   01000011 01000001 01000010

Character	Binary
A	**01000001**
B	**01000010**
C	**01000011**
D	**01000100**
E	**01000101**

   Using the section of the ASCII table above, what is the code word? [3]

   (c) What is the hexadecimal representation of the code word? [2]

   (d) Calculate the denary value representing the letter **E**. [1]

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2. Integers which are to be used in calculations are represented as pure binary numbers.

   (a) What is the pure binary representation of the number 76? [1]

   (b) The ASCII character 7 is represented by the denary number 55.
   Convert the ASCII string '76' to binary. [1]

(c) Give **two** advantages of representing integers in pure binary. [2]

3. (a) What are the limitations of the 8-bit extended ASCII character set? [1]

(b) How can these limitations be overcome? [2]

[Total 14 marks]